



September 5, 2017

#5E26084-BG4

NMOCD District II
Mike Bratcher
811 S. First St.
Artesia, NM 88210

SUBJECT: SOIL REMEDIATION CLOSURE REPORT FOR THE INCIDENT AT THE PRESTON BATTERY RELEASE, EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher,

On behalf of Lucid Energy Group (Lucid), Souder, Miller & Associates (SMA) has prepared this CLOSURE REPORT that describes the assessment, initial delineation and remediation for a release associated with the Preston Battery Release. The site is in UNIT L, SECTION 35, TOWNSHIP 20S, RANGE 24E, NMPM, Eddy County, New Mexico, on State land. Figure 1 illustrates the vicinity and location of the site.

Table 1, below, summarizes information regarding the release.

Table 1: Release information and Site Ranking	
Name	Preston Battery
Company	Lucid Energy Group
RP Number	2RP-4356
API Number	fAB1724026582
Location	32.526772°, -104.564768°
Estimated Date of Release	8/10/2017
Date Reported to NMOCD	8/23/2017
Land Owner	Federal
Reported To	Crystal Weaver
Source of Release	Pipeline
Released Material	Natural Gas
Released Volume	Unknown
Recovered Volume	0
Net Release	Unknown
Nearest Waterway	1.7 Miles from South Seven Rivers
Depth to Groundwater	Estimated to be greater than 100'
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	0
SMA Response Dates	Initial: 8/16/2017

1.0 Background

A pipeline leak occurred along the buried pipeline located south of the Preston Battery. The pipeline was excavated for repair and all potentially impacted soils were stock piled on location. Sample BH-6 represents the bottom hole of this excavation and was positioned directly beneath the release point. SW1 and SW2 are composite sidewall samples that were closest to the release point. Sample Point SP is a 5-point composite of the spill pile. The impacted area is approximately 25 feet long by 8 feet wide.

2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 10 miles east of Brantley Lake, with an elevation of approximately 3,692 feet above sea level. SMA searched the New Mexico State Engineer's Office (NMOSE) online water well database for water wells in the vicinity of the release. Nine wells are located within a three-mile radius of the site. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be greater than 100 feet below ground surface (bgs).

Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Below in Table 2 are the remediation standards and the site ranking for this location. Justification for this site ranking is found in Figure 1 and Appendix B.

Table 2.

Soil Remediation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM

Depth to Groundwater	NMOCD Numeric Rank
< 50 BGS = 20	
50' to 99' = 10	
>100' = 0	0
Distance to Nearest Surface Water	NMOCD Numeric Rank
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
Well Head Protection	NMOCD Numeric Rank
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
Total Site Ranking	0

3.0 Release Characterization

On August 16, 2017 after receiving 811 clearance, SMA field personnel assessed the release area. Soil samples were field-screened using an EC meter. Samples were collected to characterize and delineate the release. All samples were collected and processed according to NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analyses including chlorides by Method 300.0, volatile organics (BTEX) by Method 8021B, and MRO, DRO, and GRO by EPA Method 8015D. Sample locations are depicted on Figure 2. All field screening and laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

The excavated area, which was approximately 6 feet deep, was investigated with a finite sample, represented by sample BH-6. Side wall samples were also collected from the excavation (SW1 and SW2). Soil samples BH-6 and SP were screened for possible chloride impact, with results indicating low levels of chlorides. Soil contaminant concentrations are illustrated in Figure 2.

4.0 Soil Remediation Summary

On August 30, 2017, SMA received permission to backfill the location from both NMOCD and BLM representatives. All samples were below RRAL's as set by NMOCD and BLM. No further action is recommended at this time.

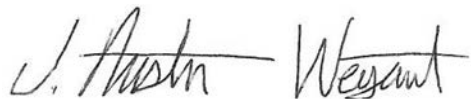
5.0 Scope and Limitations

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, regulatory liaison, and preparation of this work plan. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:



Austin Weyant
Project Scientist



Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map

Figure 2: Site and Sample Location Map

Tables:

Table 3: Summary of Sample Results

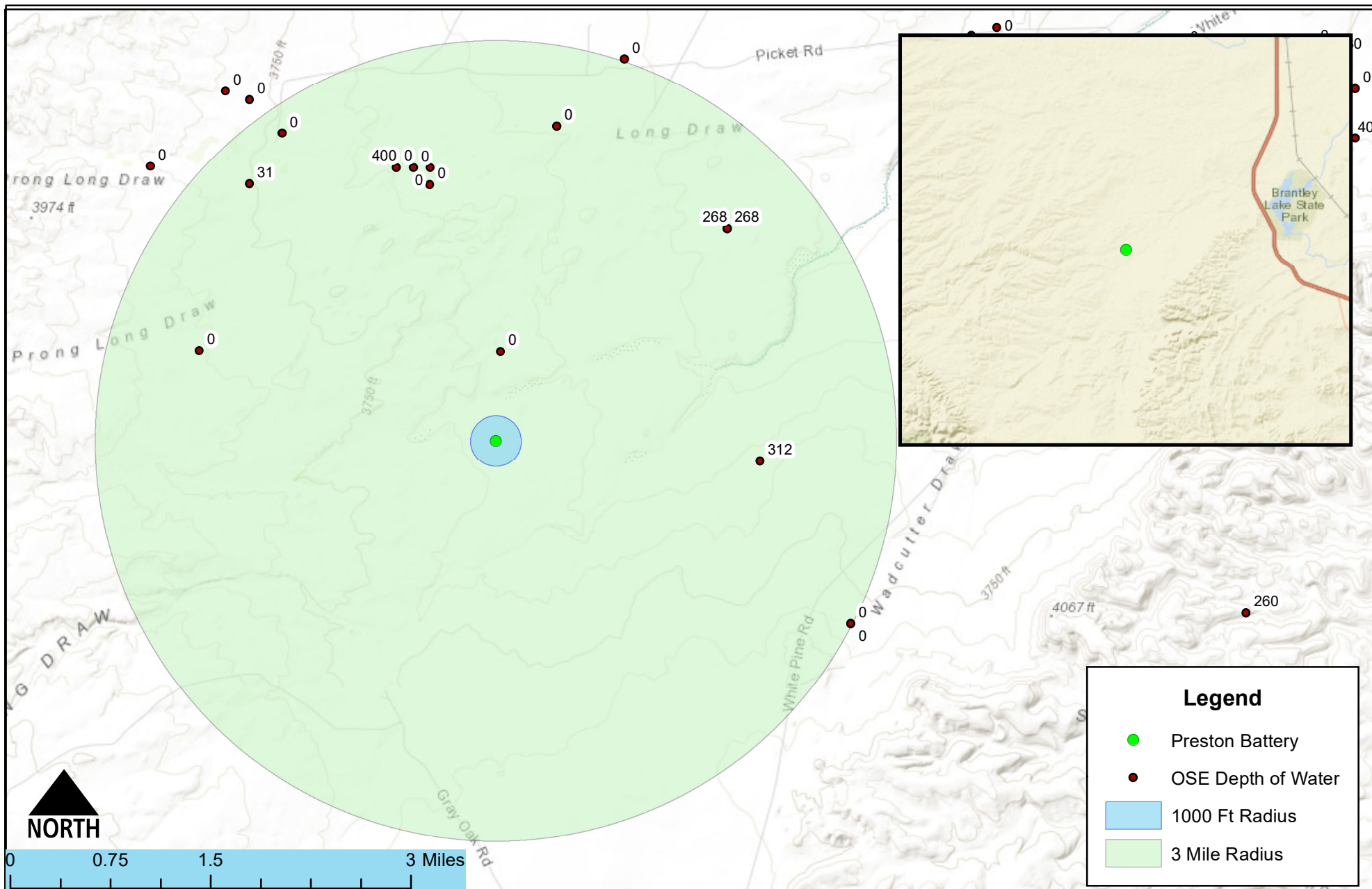
Appendices:

Appendix A: Form C141 Initial and Final

Appendix B: NMOSE Wells Report

Appendix C: Laboratory Analytical Reports

FIGURE 1
VICINITY AND NMOSE
DATA MAP



Vicinity and Well Head Protection Map
 Preston Battery - Lucid
 S 35-T20SR24E, New Mexico

Figure 1

Date Saved: 8/11/2017	Revisions		Drawn Checked Approved	Heather Patterson _____ _____ _____	
	By: _____	Date: _____			Descr: _____
	By: _____	Date: _____			Descr: _____
	Copyright 2015 Souder, Miller & Associates - All Rights Reserved				



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 Carlsbad, New Mexico 88221
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FIGURE 2
SITE AND SAMPLE
LOCATION MAP



Site and Sample Location Map
Preston Battery - Lucid
S 35-T20SR24E, New Mexico

Figure 2

Date Saved: 8/29/2017	Revisions			Drawn Checked Approved	<u>Heather Patterson</u> _____ _____ _____
	By: _____	Date: _____	Descr: _____		
	By: _____	Date: _____	Descr: _____		
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TABLE 3
SUMMARY SAMPLE RESULTS

Preston Battery

Table 3.

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Proposed Action	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- Field Screens (ppm)	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 0				50 mg/Kg	10 mg/Kg				5000 mg/Kg		
BH	8/15/2017	6	in-situ	<0.097	<0.024	<4.9	<9.4	<47	<62	735	71
SW1	8/15/2017	composite	in-situ	--	--	<4.6	<9.2	<46	<62	--	52
SW2	8/15/2017	composite	in-situ	--	--	<4.9	<9.6	<48	<63	632	31
BG	8/15/2017	0.5	in-situ	--	--	--	--	--	--	<132	--
SP	8/15/2017	composite	in-situ	<0.094	<0.024	<4.7	<9.8	<49	<64	963	60

"--" = Not Analyzed

APPENDIX A
FORM C141 INITIAL AND FINAL

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NM OIL CONSERVATION

ARTESIA DISTRICT

AUG 23 2017

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

RECEIVED

FAB1724026582
NAB1724026731

Release Notification and Corrective Action

OPERATOR

X Initial Report Final Report

Name of Company: Lucid Energy Delaware	Contact Kerry Egan	
Address 326 West Quay Artesia, NM 88210	Telephone No. 575 513-8988	
Facility Name: Preston Battery	Facility Type: Pipeline ROW	
Surface Owner: BLM	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section 35	Township 20S	Range 24E	Feet from the	North/South Line	Feet from the	East/West Line	County EDDY
-------------	---------------	-----------------	--------------	---------------	------------------	---------------	----------------	----------------

Latitude 32.526772° Longitude -104.564768°

NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Leaking flange in the line.	Date and Hour of Occurrence: 8/10/2017	Date and Hour of Discovery: 8/10/2017
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* The source of the leak. was determined to be a steel gas line leaving the battery, and connecting to a 8" steel trunk line. Upon discovery the battery was shut in, and the leaking line was isolated to prevent further loss.

Describe Area Affected and Cleanup Action Taken.*

Initial assessments show soil in an approximately a 15' radius to have been affected by the gas leak. There are no obvious signs of a release of liquids associated with this gas release. The line was excavated to identify the leak. All excavated material has been stockpiled on site. The excavation floor and sidewalls, along with the exfill pile have been sampled. A work plan will be prepared pending the sample results.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:		OIL CONSERVATION DIVISION	
Printed Name: Kerry Egan		Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Environmental Compliance Coordinator		Approval Date: 8/28/17	Expiration Date: N/A
E-mail Address: KEgan@lucid-energy.com		Conditions of Approval: See attached	
Date: Phone: 575 810-6021		Attached <input type="checkbox"/> 2RP-4356	

Attach Additional Sheets If Necessary

www.emnrd.state.nm.us
Current forms are available on our
website and should be used when
filing regulatory documents.

141743

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 8/23/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number ARP- 4356 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 9/23/2017**. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

District I
1625 N. French Dr., Hobbs, NM 88240
District II
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District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

Initial Report

X Final Report

Name of Company: Lucid Energy Delaware	Contact Kerry Egan	
Address 326 West Quay Artesia, NM 88210	Telephone No. 575 513-8988	
Facility Name: Preston Battery	Facility Type: Pipeline ROW	
Surface Owner: BLM	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section 35	Township 20S	Range 24E	Feet from the	North/South Line	Feet from the	East/West Line	County EDDY
-------------	---------------	-----------------	--------------	---------------	------------------	---------------	----------------	----------------

Latitude 32.526772° Longitude -104.564768°

NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Leaking flange in the line.	Date and Hour of Occurrence: 8/10/2017	Date and Hour of Discovery: 8/10/2017
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*


Describe Cause of Problem and Remedial Action Taken.* The source of the leak. was determined to be a steel gas line leaving the battery, and connecting to a 8" steel trunk line. Upon discovery the battery was shut in, and the leaking line was isolated to prevent further loss.

Describe Area Affected and Cleanup Action Taken.*

Initial assessments show soil in an approximately a 15' radius to have been affected by the gas leak. There are no obvious signs of a release of liquids associated with this gas release. The line was excavated to identify the leak. All excavated material has been stockpiled on site. The excavation floor and sidewalls, along with the exfill pile have been sampled. A work plan will be prepared pending the sample results.

Updated 8/30/2017: Sample analyses have shown the excavation's floors and sidewalls, along with the exfill pile to exhibit contamination below RRAL for this site (given a site ranking of 0). As such Lucid is requesting approval to backfill using the excavated soil, and close the spill.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Kerry Egan	Approved by Environmental Specialist:		
Title: Environmental Compliance Coordinator	Approval Date:	Expiration Date:	
E-mail Address: KEgan@lucid-energy.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 8/30/2017	Phone: 575 810-6021		

* Attach Additional Sheets If Necessary

APPENDIX B

NMOSE WELLS REPORT



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 10140			ED	2	1	1	35	20S	24E	540938	3599981*	1075	295		
RA 05057			ED		3	3	31	20S	25E	544071	3598678*	3241	380	312	68
RA 07771			ED	4	1	4	22	20S	24E	540073	3602194*	3372			
RA 05424			ED	4	2	3	22	20S	24E	539669	3602194*	3485	1000	400	600
RA 04502			ED		2	2	25	20S	24E	543656	3601480*	3814	300	268	32
RA 04502 REPAR			ED		2	2	25	20S	24E	543656	3601480*	3814	275	268	7
RA 02775			CH	1	4	3	21	20S	24E	537899	3601986*	4254	140	31	109
RA 10139			ED	3	3	2	21	20S	24E	538285	3602597*	4484	308		
RA 04742			ED		3	3	13	20S	24E	542408	3603517*	4867	300		

Average Depth to Water: **255 feet**

Minimum Depth: **31 feet**

Maximum Depth: **400 feet**

Record Count: 9

UTM NAD83 Radius Search (in meters):

Easting (X): 540837.51

Northing (Y): 3598909.8

Radius: 5000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

APPENDIX C
LABORATORY ANALYTICAL
REPORTS



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 28, 2017

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX

RE: Preston

OrderNo.: 1708B42

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/18/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708B42

Date Reported: 8/28/2017

CLIENT: Souder, Miller & Associates

Client Sample ID: BH-6

Project: Preston

Collection Date: 8/16/2017 10:00:00 AM

Lab ID: 1708B42-001

Matrix: SOIL

Received Date: 8/18/2017 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	71	30		mg/Kg	20	8/26/2017 12:34:02 AM	33563
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/23/2017 1:46:19 PM	33490
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/23/2017 1:46:19 PM	33490
Surr: DNOP	92.3	70-130		%Rec	1	8/23/2017 1:46:19 PM	33490
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2017 11:31:28 AM	33464
Surr: BFB	84.1	54-150		%Rec	1	8/22/2017 11:31:28 AM	33464
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/22/2017 11:31:28 AM	33464
Toluene	ND	0.049		mg/Kg	1	8/22/2017 11:31:28 AM	33464
Ethylbenzene	ND	0.049		mg/Kg	1	8/22/2017 11:31:28 AM	33464
Xylenes, Total	ND	0.097		mg/Kg	1	8/22/2017 11:31:28 AM	33464
Surr: 4-Bromofluorobenzene	118	66.6-132		%Rec	1	8/22/2017 11:31:28 AM	33464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708B42

Date Reported: 8/28/2017

CLIENT: Souder, Miller & Associates

Client Sample ID: SW1

Project: Preston

Collection Date: 8/16/2017 10:15:00 AM

Lab ID: 1708B42-002

Matrix: SOIL

Received Date: 8/18/2017 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	52	30		mg/Kg	20	8/26/2017 12:46:26 AM	33563
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/23/2017 2:52:57 PM	33490
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/23/2017 2:52:57 PM	33490
Surr: DNOP	89.7	70-130		%Rec	1	8/23/2017 2:52:57 PM	33490
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/22/2017 12:43:10 PM	33464
Surr: BFB	79.5	54-150		%Rec	1	8/22/2017 12:43:10 PM	33464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708B42

Date Reported: 8/28/2017

CLIENT: Souder, Miller & Associates

Client Sample ID: SW2

Project: Preston

Collection Date: 8/16/2017 10:30:00 AM

Lab ID: 1708B42-003

Matrix: SOIL

Received Date: 8/18/2017 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	31	30		mg/Kg	20	8/26/2017 12:58:50 AM	33563
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/23/2017 3:15:03 PM	33490
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/23/2017 3:15:03 PM	33490
Surr: DNOP	99.1	70-130		%Rec	1	8/23/2017 3:15:03 PM	33490
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/22/2017 1:55:07 PM	33464
Surr: BFB	79.7	54-150		%Rec	1	8/22/2017 1:55:07 PM	33464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1708B42**

Date Reported: **8/28/2017**

CLIENT: Souder, Miller & Associates

Client Sample ID: SP1

Project: Preston

Collection Date: 8/16/2017 11:00:00 AM

Lab ID: 1708B42-004

Matrix: SOIL

Received Date: 8/18/2017 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	60	30		mg/Kg	20	8/26/2017 1:11:15 AM	33563
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/23/2017 3:37:34 PM	33490
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/23/2017 3:37:34 PM	33490
Surr: DNOP	94.5	70-130		%Rec	1	8/23/2017 3:37:34 PM	33490
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/22/2017 2:19:09 PM	33464
Surr: BFB	82.0	54-150		%Rec	1	8/22/2017 2:19:09 PM	33464
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/22/2017 2:19:09 PM	33464
Toluene	ND	0.047		mg/Kg	1	8/22/2017 2:19:09 PM	33464
Ethylbenzene	ND	0.047		mg/Kg	1	8/22/2017 2:19:09 PM	33464
Xylenes, Total	ND	0.094		mg/Kg	1	8/22/2017 2:19:09 PM	33464
Surr: 4-Bromofluorobenzene	118	66.6-132		%Rec	1	8/22/2017 2:19:09 PM	33464

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 8
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708B42

28-Aug-17

Client: Souder, Miller & Associates

Project: Preston

Sample ID	MB-33563		SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	33563		RunNo:	45224				
Prep Date:	8/25/2017		Analysis Date:	8/25/2017		SeqNo:	1433002		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-33563		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 33563		RunNo: 45224					
Prep Date:	8/25/2017		Analysis Date: 8/25/2017		SeqNo: 1433003		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.3	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708B42

28-Aug-17

Client: Souder, Miller & Associates

Project: Preston

Sample ID	LCS-33490		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 33490		RunNo: 45145					
Prep Date:	8/22/2017		Analysis Date: 8/23/2017		SeqNo: 1429395		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	73.2	114			
Surr: DNOP	4.7		5.000		94.9	70	130			

Sample ID	MB-33490		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 33490		RunNo: 45145					
Prep Date:	8/22/2017		Analysis Date: 8/23/2017		SeqNo: 1429396		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		95.9	70	130			

Sample ID	1708B42-001AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	BH-6		Batch ID: 33490		RunNo: 45143					
Prep Date:	8/22/2017		Analysis Date: 8/23/2017		SeqNo: 1430255		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.4	47.04	3.719	100	55.8	122			
Surr: DNOP	4.4		4.704		93.4	70	130			

Sample ID	1708B42-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	BH-6		Batch ID:	33490		RunNo:	45143				
Prep Date:	8/22/2017		Analysis Date:	8/23/2017		SeqNo:	1430256		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	49	8.8	44.13	3.719	102	55.8	122	4.25	20		
Surr: DNOP	4.2		4.413		95.1	70	130	0	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708B42

28-Aug-17

Client: Souder, Miller & Associates

Project: Preston

Sample ID	MB-33464		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 33464		RunNo: 45126					
Prep Date:	8/21/2017		Analysis Date: 8/22/2017		SeqNo: 1429028		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		89.8	54	150			

Sample ID	LCS-33464		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 33464		RunNo: 45126					
Prep Date:	8/21/2017		Analysis Date: 8/22/2017		SeqNo: 1429029		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.3	76.4	125			
Surr: BFB	980		1000		98.4	54	150			

Sample ID	1708B42-002AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	SW1		Batch ID: 33464		RunNo: 45126					
Prep Date:	8/21/2017		Analysis Date: 8/22/2017		SeqNo: 1429032		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.7	23.28	0	101	77.8	128			
Surr: BFB	850		931.1		91.6	54	150			

Sample ID	1708B42-002AMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	SW1		Batch ID: 33464		RunNo: 45126					
Prep Date:	8/21/2017		Analysis Date: 8/22/2017		SeqNo: 1429033		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	24.18	0	107	77.8	128	9.57	20	
Surr: BFB	900		967.1		92.7	54	150	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708B42

28-Aug-17

Client: Souder, Miller & Associates

Project: Preston

Sample ID	MB-33464		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	33464		RunNo:	45126			
Prep Date:	8/21/2017		Analysis Date:	8/22/2017		SeqNo:	1429043		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		127	66.6	132			

Sample ID	LCS-33464		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	33464		RunNo:	45126			
Prep Date:	8/21/2017		Analysis Date:	8/22/2017		SeqNo:	1429044		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	107	80	120			
Xylenes, Total	3.3	0.10	3.000	0	110	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		131	66.6	132			

Sample ID	1708B42-001AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	BH-6		Batch ID:	33464		RunNo:	45126			
Prep Date:	8/21/2017		Analysis Date:	8/22/2017		SeqNo:	1429046		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.023	0.9294	0.01033	129	80.9	132			
Toluene	1.2	0.046	0.9294	0	134	79.8	136			
Ethylbenzene	1.3	0.046	0.9294	0	137	79.4	140			
Xylenes, Total	3.9	0.093	2.788	0.01657	138	78.5	142			
Surr: 4-Bromofluorobenzene	1.1		0.9294		122	66.6	132			

Sample ID	1708B42-001AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	BH-6		Batch ID:	33464		RunNo:	45126			
Prep Date:	8/21/2017		Analysis Date:	8/22/2017		SeqNo:	1429047		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.023	0.9174	0.01033	116	80.9	132	12.2	20	
Toluene	1.1	0.046	0.9174	0	119	79.8	136	13.0	20	
Ethylbenzene	1.1	0.046	0.9174	0	119	79.4	140	15.1	20	
Xylenes, Total	3.3	0.092	2.752	0.01657	120	78.5	142	15.0	20	
Surr: 4-Bromofluorobenzene	1.1		0.9174		120	66.6	132	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1708B42

RcptNo: 1

Received By: Sophia Campuzano 8/18/2017 9:15:00 AM

Completed By: Ashley Gallegos 8/18/2017 11:36:41 AM

Reviewed By: SRC 08/18/17

Sophia Campuzano
AJG

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard

☐ Level 4 (Full Validation)

Accreditation

☐ NELAP

☐ Other

☐ EDD (Type)

Project Manager:

Austin Weyant

Sampler:

Hmp/Can

On Ice:

☒ Yes ☐ No

Sample Temperature: 1.0

Date Time Matrix Sample Request ID

8/16/17 10am SWL BH-6

10:15 SWL

10:30 SWL

10:45 SPI

11:00 SPI

Container Type and #

402

(

(

(

Preservative Type

cancel

HEAL No.

1708B42

-001

-002

-003

-004

Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

Air Bubbles (Y or N)

Remarks:

c/ on separate report

Received by: Spk Date: 8/17/17 Time: 0800

Received by: Supriya Cor Date: 08/18/17 Time: 0915

Date: Time: Relinquished by:

Date: Time: Relinquished by:

8/17/17 00 Spk